

We claim:

1. A refractory article for use in the casting of molten metal comprising a refractory piece having a first outer surface, an insulating coating having a second outer surface and covering at least a portion of the first outer surface, and a glaze covering at least a portion of the second outer surface.

2. The refractory article of claim 1, wherein the refractory piece comprises a carbon-bonded refractory composition.

3. The refractory article of claim 1, wherein the refractory piece comprises a nozzle.

4. The refractory article of claim 3, wherein the nozzle comprises a thin-slab nozzle.

5. The refractory article of claim 1, wherein the insulating coating is made from an aqueous suspension comprising 20-80 wt.% ceramic matrix, 5-40 wt.% insulating microspheres, 0.5-15 wt.% one or more binders, 5-20 wt.% of a metal capable of melting under preheat conditions, and up to 25 wt.% water.

6. The refractory article of claim 1, wherein the glaze comprises a composition resistant to oxygen diffusion.

7. A nozzle comprising a carbon-bonded refractory composition having an outer surface at least partially covered by an insulating coating, the insulating coating comprising hollow microspheres and having a second outer surface, and a protective glaze covering at least a portion of the second outer surface.

8. The nozzle of claim 7, wherein the refractory composition comprises alumina and graphite.

9. A method for making a refractory article comprising:

applying an insulating coating over at least a portion of an outer surface of a refractory piece;

applying a glaze over at least a portion of the dried insulating coating.

10. The method of claim 9 further comprising applying the insulating coating as an aqueous suspension and drying the suspension to form the insulating coating.

11. The method of claim 9, further comprising applying the protective glaze as a glaze slip and drying the slip to form a glaze.

12. The method of claim 11, further comprising firing the dried slip to form a protective glaze.

10 13. The method of claim 9, wherein applying insulating coating and glaze includes an application method selected from the group consisting of spraying, dipping, flooding and brushing.

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Ad B²
Ad C¹